

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently amended) A device for limiting the reproducibility of information, comprising:
 - a substrate; and
 - a holographic element coupled to the substrate, the holographic element including within substantially the entire a planar area defined by the holographic element a first set of optical information in a first coded pattern and including in or on within one or more portions of the planar area defined by the holographic element a second set of optical information in a second coded pattern that is positioned in superimposed relationship with the first set of optical information, wherein each of the superimposed first set of optical information and the second set of optical information represents results in a pattern of light.
2. (Previously presented) The device according to claim 1, wherein each of the first coded pattern and the second coded pattern are determined using a single algorithm.
3. (Previously presented) The device according to claim 1, wherein each of the first coded pattern and the second coded pattern are determined using independent algorithms.
4. (Currently amended) A system for authentication of information, comprising:
 - a holographic element, the holographic element including within substantially the entire a planar area defined by the holographic element a first set of optical information in a first coded pattern and including in or on within one or more portions of the planar area defined by the holographic element a second set of optical information in a second coded pattern that is positioned in superimposed relationship with the first set of optical information, wherein each of the superimposed first set of optical information and the second set of optical information represents results in a pattern of light; and
 - a reader, including
 - an aperture, the aperture defining a first location at which the reader can accomplish a reading of the holographic element,
 - a light source,
 - a first detector positioned at a first second location relative to the holographic element when the holographic element is at the first location, and

~~a second detector positioned at a second location relative to the holographic element when the holographic element is at the location.~~

5. (Currently amended) The system according to claim 4, wherein the reader further comprises a microprocessor coupled to the light source, and the first detector and the second detector.

6. (Currently amended) The system according to claim 4, wherein the first detector comprises a first an array of detectors and the second detector comprises a second array of detectors.

7. (Currently amended) The device according to claim 1, wherein the first set of optical information is embedded throughout the planar area defined by the holographic element using a photolithographic process.

8. (Currently amended) The device according to claim 1, wherein the second set of optical information is included on one or more portions of the planar area defined by the holographic element using a printing process.

9. (Currently amended) The device according to claim 1, wherein the second set of optical information is included on one or more portions of the planar area defined by the holographic element using a solvent based surface deformation process.

10. (Currently amended) The device according to claim 1, wherein the second set of optical information is included within one or more portions of the planar area defined by in the holographic element using laser disruption of a volume of the holographic element.

11. (Currently amended) The device according to claim 1, wherein the second set of optical information is included within one or more portions of the planar area defined by in the holographic element using a photolithographic process.

12. (Canceled) The device according to claim 1, wherein the pattern of light forms a recognizable image.
13. (Canceled) The device according to claim 1, wherein the pattern of light forms an abstract image.
14. (Previously presented) The system according to claim 4, wherein the aperture is defined by a slot through which the holographic element is passed.
15. (Previously presented) The system according to claim 4, wherein the aperture is defined by a slot into which the holographic element is inserted.
16. (Previously presented) The system according to claim 4, wherein the aperture is defined by a window positioned proximate to the holographic element.
17. (Currently amended) The system according to claim 4, wherein the first location is defined by a predetermined range of distances and orientations.
18. (Currently amended) The system according to claim 4, wherein the first second location is defined by a first distance and a first orientation.
19. (Currently amended) The system according to claim 4 23, wherein the second third location is defined by a second distance and a second orientation.
20. (Currently amended) A method for authenticating information, comprising:
positioning a holographic element and a reader one relative to the other, the holographic element comprising a first set of optical information in a first coded pattern within substantially the entire a planar area defined by the holographic element and a second set of optical information in a second coded pattern in or on within one or more portions of the planar area defined by the holographic element that is positioned in superimposed relationship with the first set of optical information, wherein each of the superimposed first set of optical information and the second set of optical information represents results in a

pattern of light, and the reader comprising an aperture, the aperture defining a first location at which the reader can accomplish a reading of the holographic element, a light source, a first detector positioned at a first second location relative to the holographic element when the holographic element is at the first location, ~~and a second detector positioned at a second location relative to the holographic element when the holographic element is at the location;~~
~~reading the first set of optical information and the second set of optical information~~
detecting the pattern of light;
~~analyzing the pattern of light first set of optical information relative to the second set of optical information;~~ and
outputting a signal representing a result of the analysis.

21. (new) The system according to claim 4, wherein the light source is a first light source, and further comprising a second light source.
22. (new) The system according to claim 21, wherein the first light source and the second light source provide different wavelengths of light.
23. (new) The system according to claim 4, further comprising a second detector positioned at a third location relative to the holographic element when the holographic element is at the first location.
24. (new) The system according to claim 21, wherein the reader further comprises a microprocessor coupled to the first light source, the second light source, and the detector.